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Mixed Signals: A Case Of Hypothyroid-Induced Ogilvie's

Brieanna Brown

Paul Wichienkeur

Myxed Signals:
A Case of Hypothyroid-Induced Ogilvie's Syndrome

Brieanna Brown, MD and Paula P Wichienkuer, MD

PROVIDENCE Portland Medical Center

Introduction

- Ogilvie's syndrome, or acute colonic pseudo-obstruction (ACPO), is characterized by acute dilation of the colon, in the absence of a mechanical lesion, which obstructs the flow of intestinal contents
- We present a case of a 51 year-old woman presenting with symptoms of severe hypothyroidism found to have acute colonic pseudo-obstruction

Case Presentation

History of Present Illness:
- 51 year-old woman presents with months of progressive weakness that acutely worsened 2 days prior to admission, is unable to get out of bed

Past Medical History:
- BMI of 68, obstructive sleep apnea, diastolic heart failure, and hypothyroidism with prior medication non-adherence

Physical Exam:
- T 37.4, HR 71, BP 119/80, RR 20, SpO2 100% (RA)
- African American woman with BMI 68, no acute distress, cardiopulmonary exam unremarkable
- Obese abdomen, soft, non-tender, with normoactive bowel sounds

Laboratory data:
- CBC and CMP: within normal limits
- TSH >150, FT4 <0.10
- Infectious studies including lactate, pro-calcitonin, blood cultures, urine cultures, viral panel negative

Several Days Later…

The patient becomes more encephalopathic

Repeat laboratory data reveals:
- WBC and CMP unchanged
- Pro-calcitonin elevated to 0.35
- Repeat blood, urinalysis and urine cultures negative, CXR without acute change, ABG normal

CT abdomen and pelvis with and without contrast is obtained and reveals:
- Massive dilation of the cecum measuring up to 17 cm, transition to normal-caliber at the hepatic flexure without evidence of obstruction or stricture

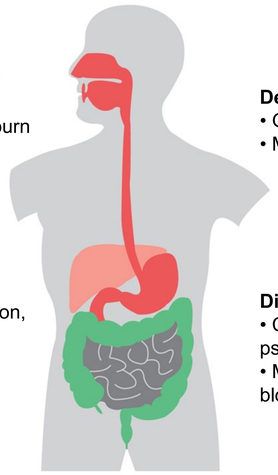
Risk Factors for ACPO

Category	Risk Factors
Surgical	Cardiac, solid organ transplant, orthopedic/spine
Cardiac/Respiratory	Shock, MI, CHF, COPD
Neurological	Dementia, Parkinson's disease, Alzheimer's disease, stroke
Metabolic	Electrolyte imbalance, diabetes, renal failure, hepatic failure
Medications	Opiates, anticholinergics, antipsychotics, cytotoxins, clonidine
Infection	VZV, herpes, CMV
Miscellaneous	Trauma, burns, severe sepsis, idiopathic

Manifestations of Hypothyroidism in the Gastrointestinal Tract

Esophageal Motility Disorders:
• Achalasia, esophageal spasm and esophageal stricture
• Manifestations: dysphagia, heart burn

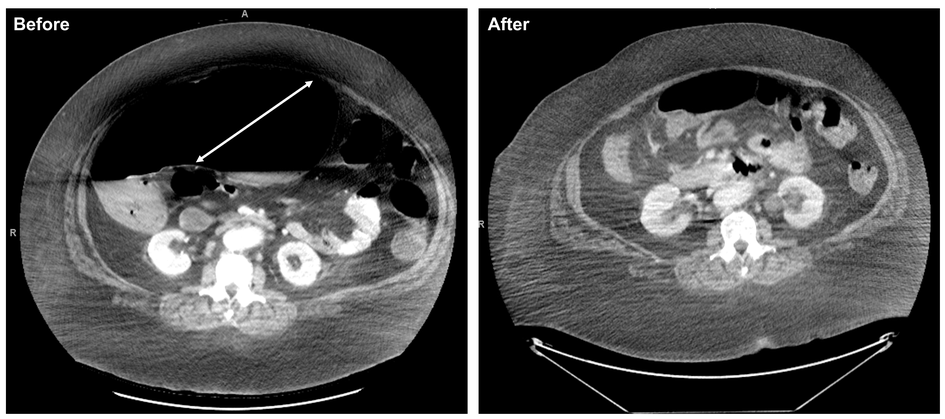
Dysregulation of microbiota:
• Bacterial overgrowth
• Manifestations: abdominal distention, flatulence, bloating



Delayed Gastric Emptying:
• Gastroparesis
• Manifestations: dyspepsia, nausea

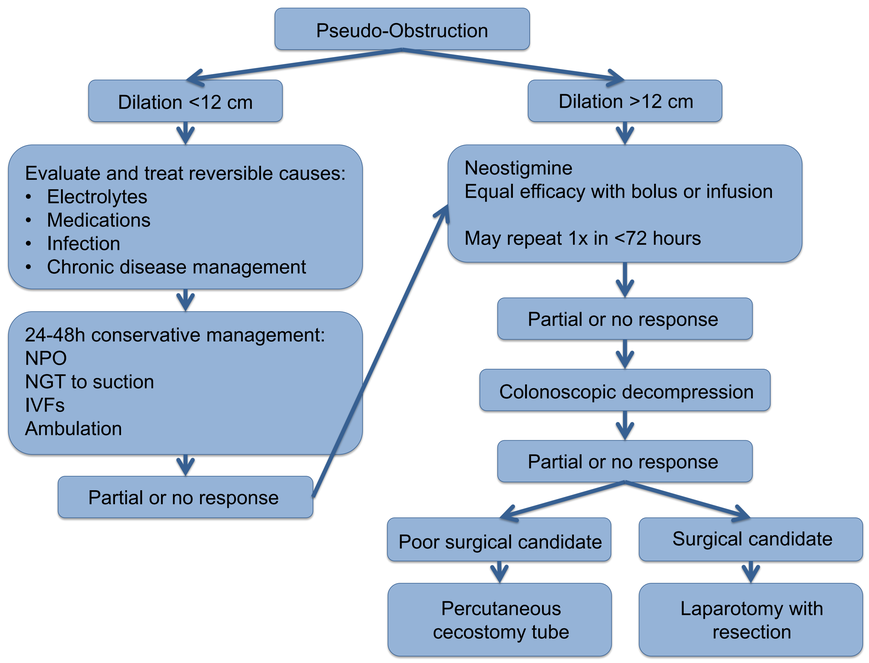
Diminished Colonic Motility:
• Constipation, ileus, megacolon, pseudo-obstruction and perforation
• Manifestations: abdominal pain, bloating, nausea/vomiting

Colonic Pseudo-Obstruction: Before & After Neostigmine Decompression



1. **Before:** CT revealing acute colonic pseudo-obstruction as evidenced by significant cecal dilation up to 17 cm (noted by white arrow)
2. **After:** CT after decompression with neostigmine revealing resolved dilation

Acute Colonic Pseudo-Obstruction Management Algorithm



Discussion

Acute Colonic Pseudo-Obstruction
- Case reports have demonstrated hypothyroidism as a known risk factor for ACPO

Incidence of classic symptoms of acute colonic pseudo-obstruction in a case series of 400 patients	
Symptom	**Incidence**
Abdominal distention	100%
Abdominal pain	83%
Nausea	63%
Vomiting	57%
Constipation	51%
Diarrhea	47%
Fever	37%
Incidence of bowel tones in acute colonic pseudo-obstruction	
Normoactive	40%
Hypoactive	31%
Hyperactive	17%
Absent	12%

Pathophysiology of Pseudo-Obstruction
- Hypothesized to be caused by autonomic imbalance resulting in a hypotonic bowel
- ACPO is more common in the critically ill where sympathetic drive is high
- Neostigmine, an acetylcholinesterase inhibitor and parasympathomimetic, is commonly used to reverse pseudo-obstruction
- **ACPO is likely driven by sympathetic excess**

Management of ACPO
- Neostigmine can be given via bolus or infusion

Formulation	Rate
Bolus	2mg over 15m
Infusion	5mg over 12 hours (0.4mg/h)

- Neostigmine should be used with caution and often requires ICU monitoring given risk of precipitating bradycardia and bronchospasm
- In this case, given the patient's operative risk factors, chemical decompression with neostigmine was administered and the patient improved.

Conclusions

- Hypothyroidism is a common condition with several manifestations in the GI tract including esophageal dysmotility, delayed gastric emptying, and diminished colonic motility
- Pseudo-obstruction typically occurs in the critically ill, though the underlying pathophysiology is poorly understood, hypothyroidism can be the only pre-disposing factor

References

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